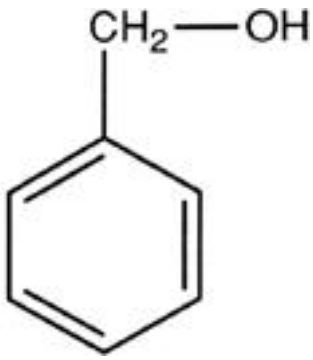
Benzyl alcohol (Alcohol benzylicus)



C_7H_8O

Relative molecular mass. 108.1

Chemical name. Benzyl alcohol; benzenemethanol; CAS Reg. No. 100-51-6.

Description. A clear, colourless, oily liquid; odour, slightly aromatic.

Solubility. Soluble in water; miscible with ethanol (~750 g/l) TS, ether R, fatty and essential oils.

Category. Antimicrobial preservative.

Storage. Benzyl alcohol should be kept in a tightly closed container, protected from light.

Additional information. Benzyl alcohol is affected by air and light, and should be protected from exposure to excessive heat.

Requirements

Identity test

Add 2-3 drops to 5 mL of potassium permanganate (25 g/l) TS, and acidify with 1 mL of sulfuric acid (~100 g/l) TS; an odour of benzaldehyde is perceptible.

Refractive index. n_D^{20} = 1.538 - 1.541.

Relative density. d_{20}^{20} = 1.043 - 1.050.

Clarity of solution. Shake 2 mL with 60 mL of water; the solution is clear.

Sulfated ash. Evaporate 10 mL from a porcelain crucible and ignite to constant mass; not more than 0.05 mg/g.

Acidity. To 10 mL add 10 mL of ethanol (~750 g/l) TS and 1 mL of phenolphthalein/ethanol TS; not more than 1 mL of carbonate-free sodium hydroxide (0.1 mol/l) VS is required to obtain the midpoint of the indicator (pink).

Peroxide value. Not more than 5.

Chlorinated compounds. Mix 2 g with 50 mL of amyl alcohol R using a dry flask, add in small quantities 3 g of sodium R (*Note*: Proceed with caution), connect the flask to a reflux condenser, warm gently until the evolution of hydrogen ceases, and boil gently for 1 hour. Cool the liquid to just below 100 °C and add 50 mL of water, 5 mL of silver nitrate (0.1 mol/l) VS, and 20 mL of nitric acid (~1000 g/l) TS. Titrate the excess of silver nitrate with ammonium thiocyanate (0.1 mol/l) VS, using ferric ammonium sulfate (45 g/l) TS as indicator. Repeat the procedure without the Benzyl alcohol being examined and make any necessary corrections. The difference between the titrations does not exceed 0.3 mL.

Aldehydes. Transfer about 20 mL, accurately measured, to a 250-mL conical flask containing 5 mL of a solution containing 3.5 g of hydroxylamine hydrochloride R in 100 mL of ethanol (~600 g/l) TS, add 50 mL of ethanol (~600 g/l) TS, and mix. Allow to stand for 10 minutes, add 1 mL of bromophenol blue/ethanol TS, and titrate with sodium hydroxide (0.1 mol/l) VS to a light green end-point. Repeat the procedure without the Benzyl alcohol being examined and make any necessary corrections.

The net volume of sodium hydroxide (0.1 mol/l) VS consumed does not exceed 4.0 mL, corresponding to 2.0 mg/g of benzaldehyde. Benzyl alcohol used for parenteral administration does not consume more than 1.0 mL, corresponding to 0.5 mg/g of benzaldehyde.